STATE OF IOWA
BEFORE THE IOWA UTILITIES BOARD

IN RE:	)	
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INTERSTATE POWER AND LIGHT COMPANY	)	**DOCKET NO. TF-2016-0321**
	)	

Response Comments

Winneshiek Energy District (WED) provides the following comments to the Iowa Utilities (Board) pursuant to the Board's Order Docketing Tariffs For Further Investigation And Setting Dates For Comments And Responses, issued September 27, 2016 in the current docket.

On July 19, 2016 the Board issued an order in Docket NOI-2014-0001 directing Interstate Power and Light (IPL) and MidAmerican Energy (MidAmerican) to file new net metering tariffs implementing temporary, yet specific, changes that will be effective for a three-year study period[1]. According to the order, these new tariffs shall:

1. Increase the net metering cap from 500KW to 1MW (up to 100% of customer's load);
2. Allow all customer classes to net meter but specify that each customer's generation will only offset the energy (kWh) charges and thus will not offset the customer charge or demand charge; and
3. Provide for an annual cash-out of excess credits at the utility's tariffed avoided cost rate. The data collected of the amount of excess credits generated by net-

[1] Iowa Utilities Board, "Order Directing Filing of Net Metering Tariffs," issued July 19, 2016, Docket No. NOI-2014-0001, Distributed Generation, page 3

metered customers, those in excess of net metering offset, should provide the Board information to address possible rule changes. The annual cash-out shall take place during the first billing cycle of the calendar year. The funds from the cash-out will be divided evenly between the customer and the utilities' fund to provide assistance to customers in need or the customer may choose to allow up to all of the excess credits to be distributed to provide assistance to customers in need.

Winneshiek Energy District appreciates the Board's careful and inclusive consideration of distributed generation throughout Docket No. NOI-2014-0001, its confirmation of existing Iowa policy to expand renewable DG in Iowa[2], and its decision to continue net metering in Iowa with specific, limited changes for a three year time period. We find IPL's proposed tariff in TF-2016-0321 inconsistent with the aforementioned goal and decision, and offer the following discussion and suggestions.

Artificial "Load Factor" Limitation On Eligible System Size

IPL takes the parenthetical reference to "100% of customer load" in point number one of the Board's July 19 order and mistakenly interprets and applies it universally to all customer classes as an artificial limitation on system size eligible for the net metering tariff. We believe this to be a misconstruction of the intent of both the Board's July 19 order and of the fundamental principles behind net metering.

First, context matters. Nearly three years of discussion in the Distributed Generation docket (NOI-2014-0001) foundational to this tariff docket, and many more years of national net metering conversation, law, and regulation, have revolved around the

[2] Iowa Utilities Board, "Order Regarding Policy Statement, Rate Design Presentations, and Net-Metering Generation Pilots," issued October 30th, 2015, Docket No. NOI-2014-0001, Distributed Generation, page 9

common understanding that the intent of net metering is to allow DG customers the option of meeting some or all of their own annual energy usage. This is in contrast to a Feed-in Tariff, or FIT, which is a policy mechanism setting rates for renewable energy vendors, rather than those simply attempting to cover own use.

IPL's attempt to place limits on DG system size eligible for net metering contradicts this common understanding. They appear to assume the parenthetical "(up to 100% of customer's load)" referenced above 1) represents a direct intent of the Board to limit net metering eligibility of system sizes between 500KW and 1MW based on customer monthly or annual peak demand, and 2) also authorizes them to extrapolate and apply a similar approach to limiting system size eligibility to ALL customers.

We interpret the "up to 100% of customer's load" to be a more general reference to the common understanding of net metering applying to a customer's total annual energy usage. It appears MidAmerican shares this understanding, as the cover letter to their proposed net billing tariff states "MidAmerican interprets the 100 percent of customer's load to mean the customer's annual energy needs. During the interconnection process, the customer's generation system will be compared to that customer's historical or anticipated annual energy usage."[3]

Second, this interpretation of the 100 percent clause as referring to a customer's total annual energy usage is supported by the third point in the Board's July 19 order, directing the utilities to "provide for an annual cash-out of excess credits at the utility's tariffed avoided cost rate." The treatment of excess credits has also been a topic of discussion within Docket NOI-2014-0001 for nearly three years. The need for a cash-out provision of some sort is based on the assumption that a customer's annual DG

[3] In MidAmerican Energy, "8.31.16 Rate PG Pilot Cover Letter", August 31, 2016, Docket TF-2016-0323, p2

production is meant to satisfy that customer's annual usage, and not function as an income source. The cash-out (at a value significantly below the net meter value) is the simplest and most elegant tool to both help customers in planning appropriate DG system sizes and to deter (intentional or unintentional) customer oversizing of DG systems, making IPL's load-factor approach entirely unnecessary in addition to extremely confusing.

And finally, IPL's load factor approach to artificially limit individual customer DG system size eligibility for the net metering tariff is discriminatory for the vast majority of customers for which IPL does not have customer-specific load data. We assume this to be the case for the majority of customers that are not large general service customers, i.e. the residential and general service classes. IPL states "for a customer with no historic usage, IPL will utilize the customer class non-coincident demand from the annual class load data filing to make this determination."[4] They then give the following example:

> If the residential customer class average load factor is 25 percent, and a customer's annual usage is 12,000 kWh, the customer specific load calculation is Load Cap = Annual usage / 8,760 hours in a year divided by the customer class load factor. In this instance the calculation for a customer using 12,000 kWh annually is 12,000 annual kWh/ 8,760 hours / 25%= 5.48kW.

Yet the theoretical 25% load factor for the residential customer class is not only not specific to the customer, but in our understanding not an *actual average* for all the customers within the class (for which there is no real data) but an *aggregate class load profile divided by number of customers in the class*. This is an important distinction, as the aggregate class load profile is a significantly flatter by definition (and thus has a

[4] Interstate Power and Light, "Interpretation No. IPL E2016-25", August 31, 2016, Docket No. TF-2016-0321, p3

higher load factor) than most *individual* members of the class, and than a *true average* of class members would be if the data existed to calculate such an average.

For example, an Iowa home with a five ton AC unit (not uncommon) would have a demand close to 6KW from AC alone (5 tons cooling at 12 EER is 5KW, plus roughly 750W for the fan). Add simultaneous use of an electric clothes dryer (4KW), oven/range (2+KW), plus background lighting, electronics, etc., and an individual, customer-specific peak demand of 15KW is not uncommon. This would give the individual home a load factor of about 9%. In this case the true customer specific system size calculation based on actual load factor (using the IPL example of a 12,000kWh annual usage) would be 12,000kWh / 8,760 hours / 9% = 15.2KW eligible system size.

Not only is the customer class load factor discriminatory by its non-specificity, but using customer-specific load factors even where data exists is simply not a rational choice for a net metering policy geared to allow customers to produce most or all of annual usage, and not overproduce. In the above example, using the customer class 25% load profile example provided by IPL, a 5.48KW PV system would produce about 7,398kWh/year (at an optimal 1,350kWh/KW) – just 62% of the hypothetical total annual energy usage of 12,000kWh. On the other hand, using a more accurate customer-specific hypothetical load factor of 9% and allowable PV system size of 15.2KW would produce 20,520kWh, or 170% of the customer's annual usage. Clearly, neither variant of a load factor approach to determining eligible customer DG system size is supportive of net metering tariff goals as outlined in the DG docket and Iowa and Board policy. A policy based on the customer's historical or anticipated annual energy usage, combined

with the implementation of an annual cash-out provision at below retail value, is dramatically simpler, more accurate, and more effective in pursuit of those policy goals.

Clarity Of Ownership And Transfer Eligibility

IPL's tariff does not appear to explicitly address the issue of ownership characteristics eligible for the tariff. Special provision number four of their proposed tariff however states "all electricity delivered shall be for the exclusive use of the customer and shall not be resold" [5]. The meaning of this provision is unclear, and could be interpreted to negatively impact both power purchase arrangements (PPA), and the transfer of ownership of the system if the original customer sells the building/location where the meter is located.

The Office of Consumer Advocate has stated in this docket that "in collaborative discussions leading up to the instant tariff filing, IPL confirmed that it interprets its net metering tariff as not restricting customer eligibility based on a customer's use of financing or PPA arrangements. MEC similarly proposes to modify its current net metering tariff to eliminate language requiring that a customer and facility owner be the same."[6]

The apparent intent behind those discussions is not yet clearly defined in either proposed tariff. Nor is it clear that the tariff follows the DG system if the ownership of the system and meter changes hands, given the vague and inconsistent language and provisions in both the IPL and MidAmerican proposals. Without clarity that the tariff will remain with the system for the 20-year minimum life of the equipment, such proposed 20-year timeframe is virtually meaningless. We encourage the Board to ensure

[5] Interstate Power and Light, "Net Billing Pilot Tariff", August 31, 2016, Docket No. TF-2016-0321, p5
[6] Office of Consumer Advocate, "Response and Objection", September 20, 2016, Docket No. TF-2016-0321, p2

uniformity between the two tariffs, full clarity in all ownership arrangements including PPAs, and tariff transfer assurance.

Timing Of Annual Cash-Out Of Excess Credits

As discussed earlier, the annual cash-out of excess credits has been a discussion item in the underlying docket NOI-2014-0001for some time, and we accept the Board's decision to establish an annual cash-out at less than retail rate during the three-year temporary net metering replacement tariff. All annual cash-out scenarios are not created equal, however, and certain variants may serve a broader universe of potential customers more equitably than others.

The issue comes down to the intersection of two variables: 1) the annual pattern of solar energy production (relatively consistent throughout Iowa), and 2) the very customer-specific annual energy usage pattern. Solar production is higher in spring and summer than fall and winter, with November and December being the lowest production months. So solar DG customers with systems sized to generate close to full annual energy consumption will be accruing kWh credits in the spring and summer months and using that balance during fall and winter.

For many customers with summer peaking electrical usage – such as heavy air conditioning demand over a relatively constant background of lights and appliances – the annual usage profile may result in little if any carryover of kWh credits beyond January 1 that would then be subject to the cash-out. Their net metering production/usage profile is relatively synchronous with the calendar year. For many other customers with significant winter electrical usage – such as dairy/livestock farms, and homes/businesses with electric heat or geothermal systems – a solar system sized

to produce 95-100% of annual energy usage would result in a significant carryover of kWh credits that would then be subject to a January 1 cash-out. This carryover is not a symptom of an oversized PV system, but rather an annual net metering production/usage profile that is asynchronous with the calendar year. In our simulations with real data from area farms (including dairies), this carryover credit may be 10-20% of total annual production, which would represent very significant economic loss to appropriately sized PV systems at a January 1 cash-out date.

Due to the wide variability in annual electrical usage patterns among customers, there is no single cash-out date that will work for all customers attempting to size PV systems to near or full annual energy usage. The date closest to that "universal match" for PV systems would be March first, and that is the date we would recommend if a single date is the only option for a zero-balance cash-out. A related option would be to provide customer choice of two or three annual cash-out dates. This is currently the case with Allamakee Clayton Electric Cooperative, which currently offers its DG customers the choice of a January 1 or April 1 cash-out[7].

There is a third option for annual cash-out of excess credits that would allow for the establishment of a single date that applies to all, achieve the goal of deterring oversized systems and preventing perpetual credit accumulation, and yet remain flexible and equitable to virtually all customers attempting to generate the bulk of their annual energy needs. This option would establish a "rollover buffer" of, say, 20% of a customer's annual usage. The annual cash-out of excess credits at the predetermined rate (avoided cost, in the case of this docket) would then apply on the annual specified date to all credits over the buffer limit. The buffer, in effect, is the flexibility factor that

[7] Allamakee Clayton Electric Cooperative "Payment of Unused Net Metering Credits", p1

would treat the full range of customer annual production/usage patterns equally, from a typical homeowner to a geothermal home/business to a dairy farm. Any production in excess of the customer's annual usage would still be subject to the cash-out provision on an annual basis, thus deterring system sizes that produce greater than a customer's actual annual energy usage.

Net Billing, Avoided Cost, RECs, And Special Provisions

IPL's tariff (and to a lesser extent MidAmerican's) make a number of changes to the current net metering tariff that appear confusing and unnecessary given the Board's directive for limited, specific adjustments. One of these is the change in terminology from net metering to net billing. IPL gives no explanation for this other than a footnote stating "the net metering program referenced in the Board's July 19th Order is commonly referred to as a net billing structure."[8]

We disagree with this assertion, and urge the board to reject the net billing terminology adopted by both utilities. While there is variability in usage of these terms nationwide, net billing terminology is more commonly used for programs that monitor all power produced by a DG system, and often compensate customers for excess production (all production fed into the grid) at rates less than the full retail rate offset achieved through on-site usage[9]. Even when surplus production is credited to the customer's bill at retail rates (as kWh credits), net billing arrangements can result in potential tax consequences for system owners as it comes closer to a "purchase and sale" transaction than a traditional net metering arrangement.

[8] Interstate Power and Light, "Interpretation No. IPL E2016-25", August 31, 2016, Docket No. TF-2016-0321, p2
[9] North Carolina Clean Energy Technology Center, "The 50 States of Solar: Q1 2016 Quarterly Report", April 2016, p14

This does not appear to be the intent of the specific changes directed by the Board on July 19. In its October 30th ruling in the underlying docket, the Board reviewed the existing net metering policy, stating the “”netting of AEP kWh production against retail kWh usage is thought by many to be economically equivalent to the AEP customer selling electricity back to the utility at the utility’s retail rate. However, net metering does not involve separate purchase and sale transactions – net metering is essentially a metering arrangement that nets kWh against kWh.”[10] The July 19 order spelling out the specific changes also reiterates that “net metering is a single meter monitoring only the net amount of electricity sold or purchased between a utility and a customer where the customer draws electricity from the utility and provides electricity back to the utility. The customer’s generation is offsetting the customer’s energy purchases from the utility.”[11]

The Board then proceeds to “direct IPL and MidAmerican to file new net metering tariffs implementing temporary, yet specific, tariff changes that will be effective for a three-year study period.”[12] Changing the tariff name (based on substantive changes to the underlying tariff) may be appropriate for a successor net metering tariff developed after that three year time period, but is not appropriate to the current compliance tariff. The same argument holds true for new terminology IPL introduces including “Private Generation Facilities” and “Private Energy Credits”. We concur with OCA’s explanation of the problematic nature of this new terminology, and their suggestion to remain with terminology based on current code and the current net metering tariff.[13]

[10] Iowa Utilities Board, “Order Regarding Policy Statement, Rate Design Presentations, and Net-Metering Generation Pilots,” issued October 30th, 2015, Docket No. NOI-2014-0001, Distributed Generation, pp 3-4
[11] Iowa Utilities Board, “Order Directing Filing of Net Metering Tariffs,” issued July 19, 2016, Docket No. NOI-2014-0001, Distributed Generation, page 3
[12] ibid
[13] Office of Consumer Advocate, “Response and Objection”, September 20, 2016, Docket No. TF-2016-0321, p3

The establishment of an annual cash-out, the inclusion of LGS customers, and the expansion of the cap from 500KW to 1MW all increase the relevance of utility avoided cost to the net metering tariff. We concur with the comments of both OCA[14] and Luther College Wind Energy LLC[15] in objecting to IPL's updated avoided cost terms, which we understand are under consideration in Docket TF-2016-0290. With the rapidly evolving distribution grid and the opportunities presented by renewable and distributed energy resources, avoided cost rates should be adjusted to reflect technology and location-specific values.

Renewable energy credits (RECs) are not directly mentioned in IPL's proposed tariff. It is our understanding that ALL RECs pertaining to systems not owned by Alliant and MidAmerican remain with their customers/owners. The extensive changes in terminology proposed by IPL could impact this status quo in unforeseen ways, and we encourage the Board to clarify that RECs belong to the DG system owner.

IPL also includes seven "special provisions" that appear ambiguous, confusing, and in some cases redundant to conditions already present in the net metering and interconnection standards. We encourage the board to eliminate these provisions as a source of potential confusion and conflict.

In Closing

We appreciate the Board's decision to move forward with specific, temporary changes to the net metering tariff as outlined in the July 19 Order, and accept the specific changes outlined by the Board. We believe the tariff filed by IPL does not adhere to the letter or spirit of the Board's order. *We encourage the Board to create a*

[14] Office of Consumer Advocate, "Response and Objection", September 20, 2016, Docket No. TF-2016-0321, p6
[15] Luther College Wind Energy Project LLC, "Comments", September 12, 2016, Docket No. TF-2016-0321, p3

uniform, clear, temporary net metering tariff, with changes limited to incorporating the provisions from the July Order, and applicable to both IPL and MidAmerican.

We also encourage the Board to consider a new docket to study values and market integration opportunities for not only customer owned solar but the full spectrum of distributed energy resources (DERs). The energy world is changing fast, and the changes are impacting not only utility business models but the entire spectrum of energy ownership and management, the changing relationships between "customer" and "utility", and the future of the distribution grid. New York's "Reforming the Energy Vision" (REV) is perhaps the best example of such a careful, vision and goal-oriented, inclusive planning process led by a state regulatory body, though there are many.

A cornerstone of a robust and inclusive future distribution grid is the full integration of DERs, energy consumers and communities as equal and active participants rather than simply customers or marginal issues. "Distributed" resources and stakeholders are no longer peripheral, but central to the tremendous opportunities for wealth creation/retention and stewardship throughout Iowa. The 3,600 watts DC of installed solar per customer achieved by Farmers Electric Coop in a few short years is just one example – expanding that achievement around Iowa could result in over 4GW DC (or roughly 3.5GW AC) of locally owned and sited solar, and that is just the tip of the iceberg of the economic opportunities facing Iowa citizens and ratepayers today.

We're all rightly proud of Iowa's leadership in wind energy. Investor-owned utility investments in wind and other renewable energy sources should continue, but not to the preclusion or exclusion of customer and community ownership of and participation in the full spectrum of DERs, and the future distribution grid. A clear, simple and temporary

net metering tariff with specific and limited adjustments is a strong and positive step towards harnessing that opportunity in Iowa.

Respectfully submitted,

/s/ Andrew Johnson

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October 21, 2016